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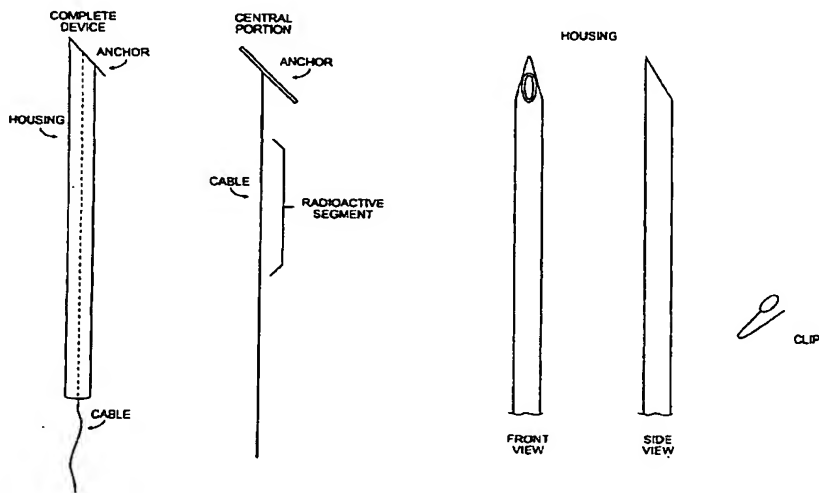
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Published:

— with international search report

[Continued on next page]

(54) Title: **A BRACHYTHERAPY DEVICE AND METHOD OF USE**



(57) Abstract: The present invention is directed to a brachytherapy device comprising a substrate comprising at least one radioactive coating layer formed thereon. The radioactive coating layer has a total radioactivity that varies in at least one dimension of the device. Methods of making radioactive coatings, such as electrochemical deposition, electroless deposition and sol-gel are also disclosed. Suitable substrates include medical devices, such as catheters, stents, brachytherapy devices and guidewires, or components thereof. The disclosed methods produce medical devices capable of generating asymmetric, or targeted, radiation fields that correspond to the morphology of a tumor. Methods of using these devices to treat cancer of the breast, brain, prostate, uterine, head and neck are also disclosed.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(15) Information about Correction:

Previous Correction:

see PCT Gazette No. 52/2002 of 27 December 2002, Section II

INTERNATIONAL SEARCH REPORT

In ☐ national Application No

PCT/US 02/09873

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61N5/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 29501 A (RADIOVASCULAR SYSTEMS L L C ;UNIV EMORY (US)) 25 May 2000 (2000-05-25) page 5, line 16 -page 7, line 23 page 25, line 21 -page 27, line 27	1-11
X	WO 00 27477 A (RADIOMED CORP) 18 May 2000 (2000-05-18) page 9, line 17 - line 21 page 21, line 25 - line 31 page 22, line 23 - line 27; figures 14,15 page 24, line 5 - line 20	1
A	---	12
A	US 1 954 868 A (GIOACCHINO FAILLA ET AL) 17 April 1934 (1934-04-17) page 3, line 65 - line 92; figures 4,6	12

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

2 August 2002

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14.10.2002

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 02/09873

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 17-19, 22-24
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy and/or surgery
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-16

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-16

Brachytherapy device with variable radioactivity in at least one dimension having an anchor and a clip

2. Claims: 20-21

Brachytherapy device comprising an inflatable device with openings for radioactive rods

3. Claims: 25-28

Implantable drug delivery device

INTERNATIONAL SEARCH REPORT

Information on patent family members

In International Application No

PCT/US 02/09873

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0029501	A	25-05-2000	AU 6495599 A EP 1157076 A1 WO 0029501 A1 US 2002077520 A1	05-06-2000 28-11-2001 25-05-2000 20-06-2002
WO 0027477	A	18-05-2000	US 6293899 B1 EP 1126900 A1 WO 0027477 A1	25-09-2001 29-08-2001 18-05-2000
US 1954868	A	17-04-1934	NONE	